ORIGINAL

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Revision of Part 15 of the Commission's Rules	)	ET Docket 98-153
Regarding Ultra-Wideband Transmission Systems	)	

To: The Commission

COMMENTS OF MOBILE COMMUNICATIONS HOLDINGS, INC.

Mobile Communications Holdings, Inc. ("MCHI"), by its attorneys and pursuant to Section 1.415 of the Commission's Rules,[1] hereby comments upon the Commission's Notice of Proposed Rule Making in the above-referenced docket.[2] In this proceeding, the Commission is seeking to establish rules that will prescribe the fundamental conditions for the use of at least some types of applications employing ultra-wideband ("UWB") technology, and will set the stage for future proceedings whereby other specific applications of UWB technology may be considered.

In the *NPRM*, the Commission tentatively concluded that all but a limited subset of UWB radars should be restricted to operating (*i.e.*, producing emissions directly into) frequency bands below 2.0 GHz.[3] The proposed cut-off at 2.0 GHz is based on the premise that radio services operating above 2 GHz use directional antennas that generally discriminate against reception of undesired signals.[4] Contrary to the Commission's beliefs, there are services in the restricted bands above 2 GHz -- including the "Big LEO" mobile satellite service ("MSS") at 2483.5-2500 MHz and the new 2 GHz MSS service at 1990-2025 MHz and 2165-2200 MHz[5]-- that operate or

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1 47 C.F.R. § 1.415.

2 *Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems*, Notice of Proposed Rule Making, FCC 00-163 (ET Docket 98-153), slip op. (rel. May 11, 2000) ("*NPRM*").

3 *See NPRM*, FCC 00-163, slip op., at 13 (¶¶ 27-30).

4 *See id.* at 13 (¶ 27).

will operate with omnidirectional antennas that are incapable of discriminating against interference caused by undesired signals.

To prevent interference to such services, MCHI calls upon the Commission to reset the cut-off to around 3.0 GHz. It also urges the Commission to await the determination through ongoing testing and measurement efforts as to whether any UWB devices (including UWB ground penetrating radars and wall imaging devices that are proposed for operation below 2.0 GHz) can operate on a co-frequency, non-interfering basis with these types of MSS receivers.

I. STATEMENT OF INTEREST

MCHI is a U.S. corporation formed in 1990 for the purpose of developing and implementing a global MSS system. It has been licensed by the Commission to construct, launch and operate the Ellipso® "Big LEO" MSS system,[6] which will offer voice and data telecommunications services to users worldwide beginning in the near future. Ellipso® will employ elliptical and equatorial medium-earth orbit satellites operating in the 1610-1626.5 MHz (user uplink) and 2483.5-2500 MHz (user downlink) frequency bands. Both of these bands are restricted bands under Section 15.205(a) of the Commission's Rules. MCHI is also an applicant for a 2 GHz MSS system, Ellipso 2®, that will operate user uplinks in the 1990-2025 MHz frequency band and user downlinks in the 2165-2200 MHz frequency band.

II. DISCUSSION

In the *NPRM*, the Commission states that the "proposals in [the *NPRM*] are designed to ensure that existing and planned radio services [. . .] are adequately protected."[7] Indeed, the

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5 *See Establishment of Policies and Service Rules for the Mobile-Satellite Service in the 2 GHz Band,* FCC 00-302, slip op. at 12 (¶ 16) (released August 25, 2000).

6 *See Mobile Communications Holdings, Inc.*, DA 97-1367, slip op. (IB/OET, rel. July 1, 1997).

7 *Id.* at 1 (¶1).

Commission makes clear that it is vitally important to protect the restricted bands against interference.[8]

MCHI applauds the Commission's commitment to protect the restricted bands, and believes that the Commission is right to set a cut-off point to prevent harmful interference from UWB systems into safety communications systems or with receivers operating in the restricted bands. Unfortunately, in establishing a cut-off at 2.0 GHz, the Commission has overlooked the fact that there are existing services that operate in the restricted bands above 2.0 GHz, as well as planned services in non-restricted bands in the 1.9-2.2 GHz range, that also need to be protected against interference caused by UWB devices.

In proposing a cut-off for most UWB devices at 2.0 GHz, the Commission observed that "most radio services operating above 2 GHz use directional antennas that generally discriminate against reception of undesired signals."[9] MCHI's MSS downlinks at 2483.5-2500 MHz for Ellipso® and at 2165-2200 MHz for Ellipso 2®, both of which will operate with low power transmissions into earth terminals that use omnidirectional antennas, are glaring exceptions to this statement.[10] MCHI notes that the same is true for Satellite Digital Audio Radio Services that use spectrum in the restricted band at 2310-2390 MHz, and that there are other services in similar situations in the restricted bands between 2500 and 2900 MHz. To ensure the protection of such receivers, the Commission must reconsider the 2.0 GHz cut-off and move it to a point where UWB would not cause interference to omnidirectional MSS earth terminal operations in the restricted band at 2483.5-2500 MHz, or to other similarly-situated services in other bands – restricted or not – in the 2-3 GHz range. Interference from co-frequency UWB systems in the 2483.5-2500 MHz, 1990-2025 MHz or 2160-2200 MHz bands could impair MCHI's service in

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8 *See id.* at 11 (¶ 24).

9 *NPRM*, FCC 00-16, slip op., at 13 (¶ 27).

10 MCHI's omnidirectional antennas are designed to receive low power code division multiple access ("CDMA") signals, thus the antennas are more susceptible to interference. UWB transmissions would compete with the low power satellite signals and cause harmful interference.

these bands – to the detriment of MCHI's forthcoming mobile-satellite service systems and thereby to the public at large.

III. CONCLUSION

The Commission has made an incorrect assumption about the use of restricted bands between 2.0 and 3.0 GHz, and in so doing has created a potential source of harmful interference to MCHI's Ellipso® system in the 2483.5-2500 MHz band and to its Ellipso 2® system in the 1990-2025 MHz and 2165-2200 MHz bands. The Commission must revisit its proposal to preclude all but certain ground radars from spectrum below 2.0 GHz by moving the cut-off line upwards to 3.0 GHz. Even so, ground penetrating radars or any other "UWB" devices should be allowed below 3.0 GHz *only* if results of ongoing tests show no potential for interference into the 2483.5-2500 MHz/1610-1626.5 MHz and 1990-2025 MHz/2165-2200 MHz bands to be used by MCHI's MSS systems.

Respectfully submitted,

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